RIBEN
MARINE

Expert's Preliminary Written Report
By Captain Jay Rivera
In the matter of:

MODA INGLESIDE OIL TERMINAL, LLC
vs.
RIVERSIDE, its engines, tackles, etc., in rem, et al.
UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
CORPUS CHRISTI DIVISION

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April 8th, 2022

EXHIBIT 1 **64755-01007**

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Introduction:

The undersigned, Captain Jay Rivera, has been retained by the firm of Royston, Razor, Vickery, & Williams, LLP to review and consider the information available concerning the events surrounding the allision of the motor tanker (M/T) RIVERSIDE with a pier at the Moda Midstream Ingleside Energy Center (MIEC) on March 15th, 2021. The objective of my evaluation was to consider the information provided by the parties, my review of the discovery responses, and the initial documents produced by the parties. Based on my training, education, and experience, I was asked to render an opinion as to the events that led to the incident that forms the basis of this suit and any deviations from the proper industry standards, practices, and standards of care.

Summary of Events:

On March 15, 2021, the M/T RIVERSIDE was transiting in a partially loaded condition (42.3 feet even keel) outbound from the Port of Corpus Christi, conned by 2 State Licensed Harbor Pilots from the Aransas-Corpus Christi Pilots. As the vessel approached the Ingleside peninsula, the Pilots slowed down and eventually stopped the engine on the RIVERSIDE to allow the M/T NORDIC AQUARIUS to depart ahead of them.

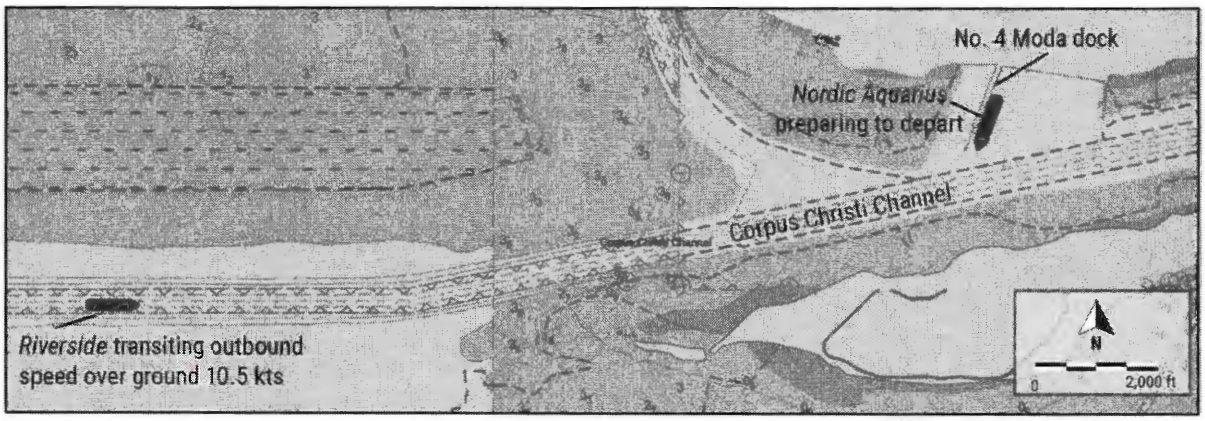

Figure 1
General Area of Incident. Diagram from NTSB Investigation Report

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The NORDIC AQUARIUS was berthed at MIEC dock 4, on the East side of the MIEC finger pier. The RIVERSIDE's main engine failed to restart after multiple attempts and the vessel eventually allided at about 1302 local time, with the MIEC finger pier that comprised both loading berths 4 and 5. No pollution or injuries were reported. The RIVERSIDE sustained some damage to its port side and the facility sustained considerable damage. MIECs pier was left inoperable and required extensive repairs.

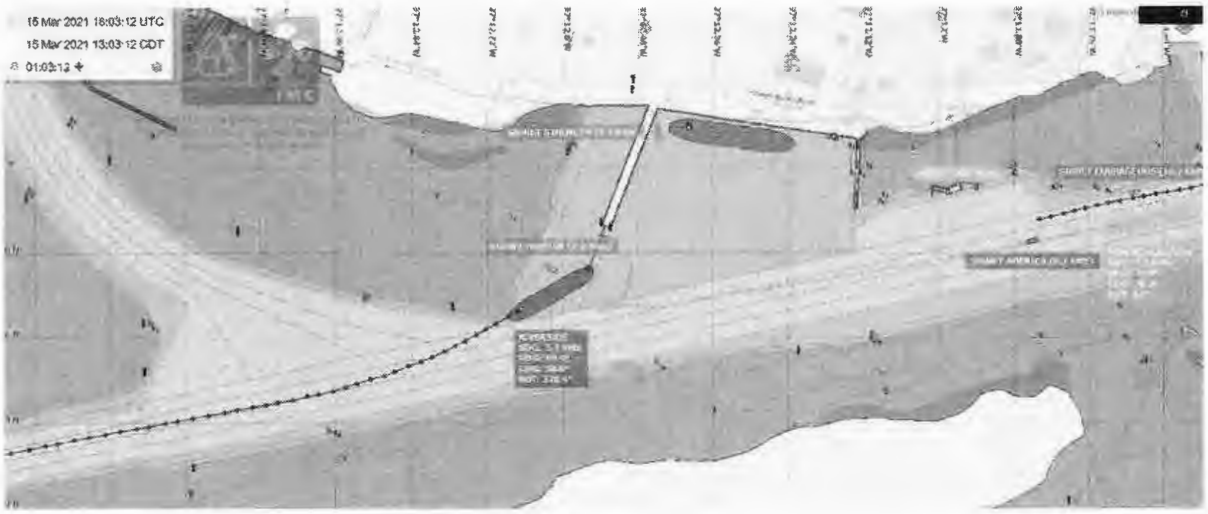


Figure 2
Diagram of allision with MIEC Pier. From Thome Ship Management Incident Report

Professional Background:

Captain Rivera is a graduate of Texas A&M University at Galveston, Texas Maritime Academy in 1998 with a Bachelor of Science Degree in Marine Transportation. Captain Rivera's "curriculum vitae" is included in this report. In addition to his degree, he also qualified and completed testing for his U.S. Coast Guard Third Mate Unlimited Any Gross Tons License in the same year. For the next 7 years Captain Rivera sailed on several types and sizes of US Jones Act and internationally trading tank vessels in all the officer ranks. In 2003, Captain Rivera was eligible for and obtained his United States Coast Guard issued Master Unlimited Any Gross Tons License and began sailing under authority of that license in 2004 when he was assigned command of the M/T Charleston, a 48,000-ton US flagged chemical tanker. In 2005, Captain Rivera was selected to the Aransas-Corpus Christi Pilots, where he served as a State Commissioned and Federally Licensed Harbor Pilot in the State of Texas for thirteen years. The last 2 years of his tenure, he served as Presiding Officer of the Pilot group. The Port of Corpus Christi is the fourth largest port in the nation which handles the largest and deepest vessels calling upon the US Gulf Coast and is at the epicenter of the nation's crude oil and gas trade.

In 2011, Captain Rivera received an Honorable Discharge from the US Navy as a Lieutenant Commander, after serving in the armed forces for thirteen years, while working concurrently in the maritime industry. During his time in the Navy, he performed numerous active-duty trainings and served overseas piloting vessels in and out of Kuwait to support ongoing military operations in the region. Captain Rivera drafted the first Navigation Safety Guidelines for the Port of Corpus Christi in 2012. He later played a significant role in the acceptance, implementation, and ratification of these Guidelines by the Board of Commissioners for the Port of Corpus Christi Authority.

In 2017, Captain Rivera planned for and successfully piloted the first Very Large Crude Carrier (VLCC) ever to enter an inland US Gulf port. Since then, Captain Rivera has been involved in the design of all proposed VLCC terminals in the Port

of Corpus Christi and other locations in the Gulf of Mexico. Captain Rivera was awarded in 2018 the US Coast Guard's Meritorious Public Service Award. This award is the second highest honor awarded by the US Coast Guard. He was commended for his efforts in two separate events; coordinating the recovery of maritime commerce in the Port of Corpus Christi and its waterway after one of the most destructive storms ever to hit the Texas Gulf Coast, Hurricane Harvey. The second event in this award was his efforts in fighting a crude oil fire caused by a deadly explosion on a vessel offshore of Port Aransas, TX. After the fire was extinguished, he assisted and coordinated search and rescue efforts, as well as the response of the ensuing oil spill.

Captain Rivera provides marine consultancy services as a maritime expert witness, developing ship/barge docks, liquified natural gas (LNG) terminals, cargo claims, tug design, and ship channel design/modifications.

Factual Overview:

I. The M/T RIVERSIDE is 820 feet in length overall (LOA) and 144 feet in width (beam). She is a steel-hulled liquid bulk tank vessel built in 2009 by STX Offshore & Shipbuilding in South Korea. DNV-GL classes the RIVERSIDE, has a Gross Register Tonnage (GRT) of 62,856 and is flagged and registered in the country of Malta. The RIVERSIDE is owned by Glory Riverside Navigation LTD and is operated by Thome Ship Management PTE LTD. (Appendix 1 Ship Particulars)

II. The vessel is powered by a single 19,380 horsepower (HP) direct drive STX MAN B&W 6S60MC-C slow speed diesel engine connected to a single fixed pitch right hand turning propeller. For a direct drive engine to change from ahead to astern, the engine had to completely stop and then restart in the opposite direction. The main engine can be started from three locations: the bridge, the engine control room, and locally at the main engine. (Appendix 1 Ship Particulars)

III. The RIVERSIDE is double hulled (cargo tanks are separated by ballast or void tanks or other spaces from its outer hull) and has a capacity of 115,445 deadweight tons (DWT) or approximately 808,412 barrels of oil. When fully loaded, her displacement is 134,426 tons. On the day of the incident, the RIVERSIDE was not fully loaded. Her deadweight was 97,575 tons and was displacing approximately 116,556 tons. She was at an even keel draft of 13.1 meters or 43 feet. (Appendix 2 Pilot Card)

IV. The project dimensions of the Corpus Christi ship channel where the incident took place are 500 feet wide at a depth of 47 feet. The maximum allowable draft in the Corpus Christi Ship Channel is 45 feet. (Appendix 3 Rules & Regulations Governing the Corpus Christi Ship Channel)

V. Prior to arriving in Corpus Christi, the RIVERSIDE switched the main engine fuel supply to low-sulfur marine gas oil on March 11. At 0548 on March 12, after arriving at Port Aransas, the engine was stopped, and she drifted for about 5 hours. At 1030, the deck watch officer on the bridge attempted to start the main engine in preparation for entering port, but it failed to start.

VI. Multiple attempts from different control stations resulted in mixed results, with the engine sometimes starting ahead but not astern. After troubleshooting the engine start system, the engine would start in the ahead mode but still would not start in the astern mode. The Chief

Engineer contacted the operating company for advice and decided he would engage the limit cancel mode on fuel injection to allow more fuel at engine start. The engine started ahead and was successfully switched between ahead and astern modes. No additional evaluation was conducted. While the engine started successfully, both ahead and astern, the cause of the engine start failure was not properly identified or corrected. (Deposition of Chief Engineer D'Almeida)

VII. The M/T NORDIC AQUARIUS was berthed at MIEC #4 and had completed loading a full load of crude oil on the date of the incident. She was departing the berth under the direction of 2 State Licensed Harbor Pilots from the Aransas-Corpus Christi Pilots. The Pilots on both vessels agreed to allow for the NORDIC AQUARIUS to depart ahead of the RIVERSIDE.

VIII. Due to the rate of closure and the decision to allow the NORDIC AQUARIUS to depart ahead, the RIVERSIDE had to stop the main engine and drift. Once the engine failed to restart, the RIVERSIDE drifted towards and allided with the MIEC pier; despite the efforts of the assist tug to divert the out-of-control ship.

Opinions:

1. **The Master is responsible for the safe operation of the vessel:**

   a. The Master is empowered in all situations with overriding authority to act decisively and according to his/her best judgement. The Master is the Company's representative on board. His/her duty is to command the vessel in accordance with applicable Federal and International regulations and with the Company's policies and procedures. The Master is always ultimately responsible for the safety of its crew, the vessel, and its cargo.

2. **The Captain of the RIVERSIDE failed to take proper precautions, in conformity with good seamanship principles, regulations, and company policies. This set the stage for the incident.**

   a. The engine on the RIVERSIDE had been malfunctioning prior to entering the Port and a temporary "band aid" fix was performed by the vessel's crew. The RIVERSIDE's Master chose to hide this critical malfunction and not report it to the USCG or Pilots.
   b. The Master did not conduct a proper and complete Master/Pilot exchange and did not divulge the engine issue to the Pilots.
   c. Had the Pilots been informed of the possibility of the engine not restarting, they would have taken additional precautions to sail the RIVERSIDE.
   d. The Master of the RIVERSIDE should have challenged the Pilots agreement with the departing NORDIC AQUARIUS since it would have required the RIVERSIDE stopping her engines to slow down. He should have asked for an alternative meeting agreement or at the very least, have notified the Pilot of the possibility of the engine not restarting.

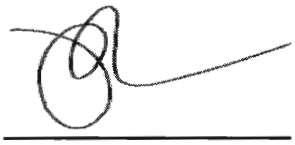
3. **The Captain of the NORDIC AQUARIUS also failed to take proper precautions, in conformity with good seamanship principles. He should have insisted the Pilot clear the mooring lines, stay alongside or inside the MIEC basin, and allow the RIVERSIDE to pass. He should not have allowed his vessel to cut out in front of the RIVERSIDE and create a close quarters situation.**

Conclusions:

The investigation is ongoing and as added information becomes available; I may supplement my report as needed. Based on my review of the current documents in the record, I have reached the following conclusions:

- The RIVERSIDE engine's unreliability in starting was known prior to entering the Port of Corpus Christi. The vessel's crew, with the assistance of shoreside personnel were unable to properly identify or correct the problem. Instead, an unproven work around was used by the Chief Engineer to temporarily get the engine to start. These actions were a causal factor to the incident.
- The Chief Engineer continued operating the engine with the "cancel limits" mode on. This is not a normal operating condition for the engine and is a temporary function that bypasses the engine's normal operation. This action alone should have indicated to the vessel's crew and operators that there was still an unresolved issue with starting the main engine. Emails from the vessel to shore managers also revealed there was uncertainty on whether the starting issue was resolved. Had the vessel or the shoreside management decided to investigate the root cause of the starting failures, a technician could have been ordered to attend the ship. The buildup on the starting air valve would have likely been identified and corrected, thus preventing the allision.
- The RIVERSIDE's Master failed to notify the Pilots of the of the previous starting failures and the likelihood of the engine malfunctioning again. With this critical piece of information missing, the Pilots could not take proper precautions to prevent the incident.
- The NORDIC AQUARIUS departing the berth and cutting out in front of the RIVERSIDE caused the Pilots to have to stop the engine and drift to avoid a collision between the vessels. Had the NORDIC AQUARIUS simply stayed within the MIEC basin, it is highly likely that the RIVERSIDE would not have had to stop its engines, resulting in the subsequent allision with the MIEC pier.
- The VDR on the RIVERSIDE recorded an exceptional time lapse (over 40 seconds) from the time of the engine failure until the Pilot was notified. With assist tugs already underway in the area, this lost time was critical and would have likely made the difference between a near miss and the allision.

The opinions expressed in this report are my own, are given without prejudice, and only relate to this incident. In addition to the documentation provided to Captain Rivera by firm of Royston, Razor, Vickery, & Williams, LLP; internationally recognized maritime reference and safety manuals, actual experience as Master on a US flagged vessel, and the extensive experience gathered working as a Licensed and State Commissioned Harbor Pilot in the waters where the incident occurred were used to arrive at the opinions and conclusions in this report. My education, training, and background were also used to arrive at the opinions and conclusions in this report. I reserve the right to alter my opinions should any additional information become available to me.



Captain Jay Rivera
Riben Marine, Inc.

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